Abstract

An angle $\theta 1$ between the peripheral direction edge section of each permanent magnet (3) or the pole center side edge section of rotor surface adjacent section of non-magnetic layer (4) continuous or adjacent to the peripheral direction edge section of each permanent magnet (3) and between poles, and an angle $\theta 2$ between pole center side edge section of the rotor surface adjacent section of the second non-magnetic layer (5) and the between poles, are determined to be

$0 < \theta 1 < 180/(5 \cdot Pn)$

and

$180/(5 \cdot Pn) \leqq \theta 2 \leqq 180 \times 2/(5 \cdot Pn)$

or

$0 < \theta 1 < 180/(7 \cdot Pn)$

and

$180/(7 \cdot Pn) \leqq \theta 2 \leqq 180 \times 2/(7 \cdot Pn)$

where a pole pair number is Pn.

Therefore, specific order, for example 5-th order and 7-th order, harmonics component of the magnetic flux distribution waveform (induction voltage waveform) can be reduced and unnecessary radial force and thrust force can be prevented from occurrence, while sufficient magnetic flux can be maintained.